



## ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0

Title of  
Invention

METHOD AND APPARATUS FOR EFFICIENT VERTICAL  
FLUID DELIVERY FOR COOLING A HEAT PRODUCING  
DEVICE

Application Number: 10/698179  
Confirmation Number: 2504  
First Named Applicant: Thomas Kenny  
Attorney Docket Number:



Search string: ( 6090251 or 6096656 or 6100541 or 6101715  
or 6119729 or 6126723 or 6129145 or 6129260  
or 6131650 or 6146103 or 6154363 or 6159353  
or 6171067 or 6174675 or 6176962 or 6186660  
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or 6322753 or 6324058 or 6337794 or 6351384  
or 6388317 or 6396706 or 6400012 or 6406605  
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or 6443222 or 6444461 or 6457515 or 6495015  
or 6537437 or 6543521 or 6553253 or 6572749  
or 6588498 or 6591625 ).pn.

### US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

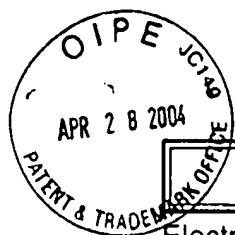
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	12	6159353	2000-12-12	West et al.	
	13	6171067	2001-01-09	Parce	B1
	14	6174675	2001-01-16	Chow et al.	B1
	15	6176962	2001-01-23	Soane et al.	B1
	16	6186660	2001-02-13	Kopf-Sill et al.	B1
	17	6210986	2001-04-03	Arnold et al.	B1
	18	6216343	2001-04-17	Leland et al.	B1
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	20	6227809	2001-05-08	Forster et al.	B1
	21	6234240	2001-05-22	Cheon	B1
	22	6238538	2001-05-29	Parce et al.	B1
	23	6277257	2001-08-21	Paul et al.	B1
	24	6287440	2001-09-11	Arnold et al.	B1
	25	6301109	2001-10-09	Chu et al.	B1
	26	6313992	2001-11-06	Hildebrandt	B1
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Signature

Examiner Name	Date
<i>Paul M. Reysin</i>	<i>3-14-06</i>



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or 6054034 or 6068752 ).pn.

### US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

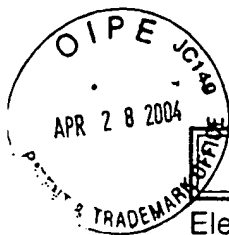
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Signature

Examiner Name	Date
<i>[Signature]</i>	3-14-06



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Search string: ( 3654988 or 3817321 or 3823572 or 3923426  
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or 5336062 or 5380956 ).pn.

## US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

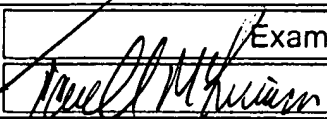
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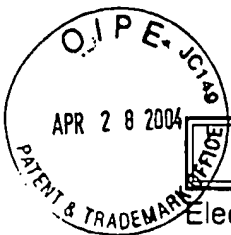
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TM	11	4450472	1984-05-22	Tuckerman et al.
TM	12	4485429	1984-11-27	Mittal
	13	4516632	1985-05-14	Swift et al.
	14	4540115	1985-09-10	Hawrylo
	15	4561040	1985-12-24	Eastman et al.
	16	4567505	1986-01-28	Pease et al.
	17	4573067	1986-02-25	Tuckerman et al.
	18	4664181	1987-05-12	Sumberg
	19	4758926	1988-07-19	Herrell et al.
	20	4866570	1989-09-12	Porter
	21	4868712	1989-09-19	Woodman
	22	4894709	1990-01-16	Phillips et al.
	23	4896719	1990-01-30	O'Neill et al.
	24	4908112	1990-03-13	Pace
	25	4938280	1990-07-03	Clark
	26	5009760	1991-04-23	Zare et al.
	27	5016138	1994-05-14	Woodman
	28	5057908	1991-10-15	Weber
	29	5058627	1991-10-22	Brannen
	30	5070040	1991-12-03	Pankove
	31	5083194	1992-01-21	Bartilson
	32	5088005	1992-02-11	Ciaccio
	33	5096388	2002-03-17	Weinberg
	34	5099311	1992-03-24	Bonde et al.
	35	5099910	1992-03-31	Walpole et al.
	36	5125451	1992-01-30	Matthews
	37	5131233	1992-07-21	Cray et al.
	38	5203401	1993-04-20	Hamburgen et al.
	39	5218515	1993-06-08	Bernhardt
	40	5219278	1993-06-15	Van Lintel
	41	5232047	1993-08-03	Matthews
	42	5239200	1993-08-24	Messina et al.
TM	43	5263251	1993-11-23	Matthews
TM	44	5274920	1994-01-04	Mathews
TM	45	5308429	1994-05-03	Bradley



TM	46	5309319	1994-05-03	Messina
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TM	48	5325265	1994-06-28	Turlik et al.
TM	49	5336062	1994-08-09	Richter
TM	50	5380956	1995-01-10	Loo et al.

Signature

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		3-14-06



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Search string: ( 6632655 or 20010016985 or 20010024820 or  
20010044155 or 20010045270 or 20010046703  
or 20010055714 or 20020011330 or  
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### US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
<i>TM</i>	1	6632655	2003-10-14	Mehta et al.	B1		

### US Published Applications

Note: Applicant is not required to submit a paper copy of cited US Published Applications

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<i>TM</i>	1	20010016985	2001-08-30	Insley et al.	A1		
<i>TM</i>	2	20010024820	2001-09-27	Mastromatteo et al.	A1		
<i>TM</i>	3	20010044155	2001-11-22	Paul et al.	A1		
	4	20010045270	2001-11-29	Bhatti et al.	A1		
	5	20010046703	2001-11-29	Burns et al.	A1		
	6	20010055714	2001-12-27	Cettour-Rose et al.	A1		
<i>TM</i>	7	20020011330	2002-01-31	Insley et al.	A1		
<i>TM</i>	8	20020134543	2002-09-26	Estes et al.	A1		

Signature

FORM PTO-1449  
(Modified)

MAY 03 2004

U.S. Department of Commerce  
Patent and Trademark Office

Attorney Docket No.: COOL-01302

Serial No.: 10/698,179

INFORMATION DISCLOSURE STATEMENT BY APPLICANT  
(Use Several Sheets If Necessary)

Applicants: Thomas W. Kenny et al.

Filing Date: October 30, 2003

Group Art Unit: 3753

(37 CFR § 1.98(b))

## FOREIGN PATENTS OR PUBLISHED FOREIGN PATENT APPLICATIONS

		Document Number	Publication Date	Country / Patent Office	Class	Subclass	Translation	
							Yes	No
TM	AA	97212126.9	03/04/97	CN	B01D	61/42		X
TM	AB	2000-277540	10/06/00	JP	H01L	21/50		X

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	AE	Shuchi Shoji et al., "Microflow devices and systems", J. Microtech. Microeng. 4 (1994), pages 157-171, printed in the U.K.						
	AF	Angela Rasmussen et al., "Fabrication Techniques to Realize CMOS-Compatible Microfluidic Microchannels", Journal of Microelectromechanical, Vol. 10, No. 2, June 2001, pages 286-297.						
	AG	J. H. Wang et al., "Thermal-Hydraulic Characteristic of Micro Heat Exchangers", 1991, DSC-Vol. 32, Micromechanical Sensors, Actuators, and Systems, pages 331-339.						
	AH	Gad Hetsroni et al., "Nonuniform Temperature Distribution in Electronic Devices Cooled by Flow in Parallel Microchannels", IEEE Transactions on Components and Packaging Technologies, March 2001, Vol. 24, No. 1, pages 16-23.						
	AI	X. F. Peng et al., "Heat Transfer Characteristics of Water Flowing through Microchannels", Experimental Heat Transfer An International Journal, Vol. 7, No. 4, October-December 1994, pages 265-283.						
	AJ	Linan Jiang et al., "Forced Convection Boiling in a Microchannel Heat Sink", Journal of Microelectromechanical Systems, Vol. 10, No. 1, March 2001, pages 80-87.						
	AK	Muhammad M. Rahman et al., "Experimental Measurements of Fluid Flow and Heat Transfer in Microchannel Cooling Passages in a Chip Substrate", 1993, EEP-Vol. 4-2, Advances in Electronic Packages, pages 685-692.						
	AL	X. F. Peng et al., "Forced convection and flow boiling heat transfer for liquid flowing through Microchannels", 1993, Int. J. Heat Mass Transfer, Vol. 36, No. 14, pages 3421-3427.						
	AM	Lung-Jieh Yang et al., "A Micro Fluidic System of Micro Channels with On-Site Sensors by Silicon Bulk Micromachining", September 1999, Microfluidic Devices and Systems II, Vol. 3877, pages 267-272.						
	AN	G. Mohiuddin Mala et al., "Heat transfer and fluid flow in microchannels", 1997, Int. J. Mass transfer, Vol. 40, No. 13, pages 3079-3088, printed in Great Britain.						
	AO	J. M. Cuta et al., "Fabrication and Testing of Micro-Channel Heat Exchangers", SPIE Microlithography and Metrology in Micromachining, Vol. 2640, 1995, pages 152-160.						
	AP	Linan Jiang et al., "A Micro-Channel Heat Sink with Integrated Temperature Sensors for Phase Transition Study", 1999, 12 <sup>th</sup> IEEE International Conference on Micro Electro Mechanical Systems, pages 159-164.						
	AQ	Linan Jiang et al., "Fabrication and characterization of a microsystem for a micro-scale heat transfer study", J. Micromech. Microeng. 9 (1999) pages 422-428, printed in the U.K.						
	AR	M. B. Bowers et al., "High flux boiling in low flow rate, low pressure drop mini-channel and micro-channel heat sinks", 1994, Int. J. Heat Mass Transfer, Vol. 37, No. 2, pages 321-332.						
	AS	Yongendra Joshi, "Heat out of small packages", December 2001, Mechanical Engineer, pages 56-58.						
	AT	A. Rostami et al., "Liquid Flow and Heat Transfer in Microchannels: a Review", 2000, Heat and Technology, Vol. 18, No. 2, pages 59-68.						
	AU	Lian Zhang et al., "Measurements and Modeling of Two-Phase Flow in Microchannels with Nearly Constant Heat Flux Boundary Conditions", Journal of Microelectromechanical Systems, Vol. 11, No. 1, February 2002, pages 12-19.						
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	AZ	J. C. Y. Koh et al., "Heat Transfer of Microstructure for Integrated Circuits", 1986, Int. Comm. Heat Mass Transfer, Vol. 13, pages 89-98.						
	BA	Snezana Konecni et al., "Convection Cooling of Microelectronic Chips", 1992, InterSociety Conference on Thermal Phenomena, pages 138-144.						

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



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




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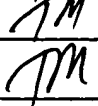
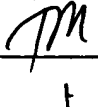

Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 (Modified)		U.S. Department of Commerce Patent and Trademark Office		Attorney Docket No.: COOL-01302	Serial No.: 10/698,179
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use Several Sheets If Necessary)				Applicants: Thomas W. Kenny et al.	
				Filing Date: October 30, 2003	Group Art Unit: 3753
(37 CFR § 1.98(b))					
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)					
TM	BB	Michael B. Kleiner et al., "High Performance Forced Air Cooling Scheme Employing Microchannel Heat Exchangers", 1995, IEEE Transactions on Components, Packaging, and Manufacturing Technology-Part A, Vol. 18, No. 4, pages 795-804.			
TM	BC	Jerry K. Keska Ph. D. et al., "An Experimental Study on an Enhanced Microchannel Heat Sink for Microelectronics Applications", EEP-Vol. 26-2, Advances in Electronic Packaging, 1999, Vol. 2, pages 1235-1259.			
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	BE	Joseph C. Tramontana, "Semiconductor Laser Body Heat Sink", Xerox Disclosure Journal, Vol. 10, No. 6, November/December 1985, pages 379-381.			
	BF	Sarah Arulanandam et al., "Liquid transport in rectangular microchannels by electroosmotic pumping", Colloid and Surfaces A: Physicochemical and Engineering Aspects 161 (2000), pages 89-102.			
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Examiner:			Date Considered:		
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.					



FORM PTO-1449  
(Modified)U.S. Department of Commerce  
Patent and Trademark Office

Attorney Docket No.: COOL-01302

Serial No.: 10/698,179

INFORMATION DISCLOSURE STATEMENT BY APPLICANT  
(Use Several Sheets If Necessary)

Applicants: Thomas W. Kenny et al.

(37 CFR § 1.98(b))

Filing Date: October 30, 2003

Group Art Unit: 3753

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TM	GM	D. B. Tuckerman et al., <u>High-Performance Heat Sinking for VLSI</u> , 1981, IEEE Electron Device Letters, Vol. EDL-2, No. 5, pages 126-129.
TM	GN	Bengt Sunden et al., <u>An Overview of Fabrication Methods and Fluid Flow and Heat Transfer Characteristics of Micro Channels</u> , pages 3-23.
TM	GO	David S. Shen et al., <u>Micro Heat Spreader Enhance Heat Transfer in MCMs</u> , 1995, IEEE Multi-Chip Module Conference, pages 189-194.
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TM	GR	Sanjay K. Roy et al., <u>A Very High Heat Flux Microchannel Heat Exchanger for Cooling of Semiconductor Laser Diode Arrays</u> , 1996, IEEE Transactions on components, packaging, and manufacturing technology-part B, Vol. 19, No. 2, pages 444-451.
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Examiner:

Date Considered:

EXAMINER:

Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

## ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18  
 Stylesheet Version v18.0

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Application Number:	10/698179	*10/698179*					
Confirmation Number:	2504						
First Named Applicant:	Thomas Kenny						
Attorney Docket Number:							
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Signature

Examiner Name	Date

*David McK...*

3-14-06

## ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v1.8  
 Stylesheet Version v1.8.0

Title of Invention	METHOD AND APPARATUS FOR EFFICIENT VERTICAL FLUID DELIVERY FOR COOLING A HEAT PRODUCING DEVICE						
Application Number:	10/698179	*10/698179*					
Confirmation Number:	2504						
First Named Applicant:	Thomas Kenny						
Attorney Docket Number:							
Search string:	(5383340 or 5421943 or 5427174 or 5436793 or 5459099 or 5508234 or 5514832 or 5514906 or 5544696 or 5548605 or 5575929 or 5579828 or 5585069 or 5641400 or 5692558 or 5696405 or 5703536 or 5704416 or 5727618 or 5759014 or 5763951 or 5774779 or 5800690 or 5801442 or 5835345 or 5836750 or 5858188 or 5863708 or 5869004 or 5870823 or 5874795 or 5876655 or 5880017 or 5880524 or 5901037 or 5916192 or 5940270 or 5942093 or 5964092 or 5965001 or 5965813 or 5978220 or 5997713 or 5998240 or 6007309 or 6010316 or 6013164 or 6019882 or 6054034 or 6068752 ).pn.						
US Patent Documents							
Note: Applicant is not required to submit a paper copy of cited US Patent Documents							
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Signature

Examiner Name	Date

## ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v1.8  
 Stylesheet Version v1.8.0

Title of  
 Invention

METHOD AND APPARATUS FOR EFFICIENT VERTICAL  
 FLUID DELIVERY FOR COOLING A HEAT PRODUCING  
 DEVICE

Application Number: 10/698179

\*10/698179\*

Confirmation Number: 2504

First Named Applicant: Thomas Kenney

Attorney Docket Number:

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Note: Applicant is not required to submit a paper copy of cited US Patent Documents

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*David M. Kenney* 3-14-06

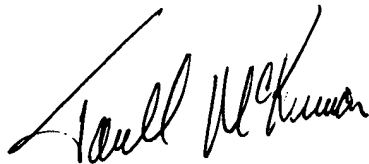
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Stylesheet Version v18.0

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Application Number:	10/698179 *10/698179*						
Confirmation Number:	2504						
First Named Applicant:	Thomas Kenny						
Attorney Docket Number:							
Search string:	( 6632655 or 20010016985 or 20010024820 or 20010044155 or 20010045270 or 20010046703 or 20010055714 or 20020011330 or 20020134543 ).pn.						
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Note: Applicant is not required to submit a paper copy of cited US Patent Documents							
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Signature

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## ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0

Title of  
Invention

METHOD AND APPARATUS FOR EFFICIENT VERTICAL  
FLUID DELIVERY FOR COOLING A HEAT PRODUCING  
DEVICE

Application Number: 10/698179

Confirmation Number: 2504

First Named Applicant: Thomas Kenny

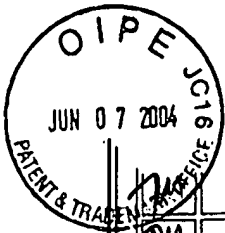
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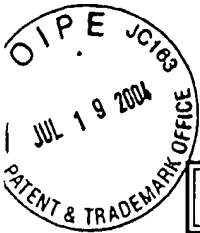
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Signature

Examiner Name	Date

*David McKinnon* 3-14-06



ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18  
Stylesheet Version v18.0

Title of Invention	METHOD AND APPARATUS FOR EFFICIENT VERTICAL FLUID DELIVERY FOR COOLING A HEAT PRODUCING DEVICE
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Application Number: 10/698179  
Confirmation Number: 2504  
First Named Applicant: Thomas Kenny  
Attorney Docket Number:  
Search string: ( 3948316 or 5161089 or 5228502 or 5239443 or 5265670 or 5978220 or 5993750 or 6729383 ).pn.



Certification: This Information Disclosure Statement was submitted under the following conditions, which satisfies the requirement under 37 CFR 1.97(e). The filer certified:

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement.

US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
<i>TM</i>	1	3948316	1976-04-06	Souriau			
<i>TM</i>	2	5161089	1992-11-03	Chu et al.			
<i>TM</i>	3	5228502	1993-07-20	Chu et al.			
	4	5239443	1993-08-24	Fahey et al.			
	5	5265670	1993-11-30	Zingher			
	6	5978220	1999-11-02	Frey et al.			
<i>TM</i>	7	5993750	1999-11-30	Ghosh et al.			
<i>TM</i>	8	6729383	2004-05-04	Cannell et al.	B1		

*Paul McKinnon 3-14-06*



FORM PTO-1449  
(Modified)U.S. Department of Commerce  
Patent and Trademark Office

Attorney Docket No.: COOL-01302

Serial No.: 10/698,179

INFORMATION DISCLOSURE STATEMENT BY APPLICANT  
(Use Several Sheets If Necessary)

Applicants: Thomas W. Kenny et al.

(37 CFR § 1.98(b))

Filing Date: October 30, 2003

Group Art Unit: 3753

## U.S. PATENT DOCUMENTS

Examiner Initials		Serial / Patent Number	Issue Date	Applicant / Patentee	Class	Subclass	Filing Date
<i>TM</i>	AA	6,632,719 B1	10/14/03	DeBoer et al.	438	381	08/31/00
	AB						
	AC						
	AD						
	AE						
	AF						
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	BB						
	BC						
	BD						
	BE						
	BF						
	BG						
	BH						

Examiner:

*Michael McKeon*

Date Considered:

*3-14-06*

EXAMINER:

Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449  
(Modified)U.S. Department of Commerce  
Patent and Trademark Office

Attorney Docket No.: COOL-01302

Serial No.: 10/698,179

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicants: Thomas W. Kenny et al.

(37 CFR § 1.98(b))

Filing Date: October 30, 2003

Group Art Unit: 3753

## U.S. PATENT DOCUMENTS

Examiner Initials		Serial / Patent Number	Issue Date	Applicant / Patentee	Class	Subclass	Filing Date
MM	AA	5,179,500	01/12/93	Koubek et al.	361	385	04/02/91
	AB						
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	BH						

Examiner:

Date Considered:

EXAMINER:


Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

# ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0

<b>Title of Invention</b>	<b>METHOD AND APPARATUS FOR EFFICIENT VERTICAL FLUID DELIVERY FOR COOLING A HEAT PRODUCING DEVICE</b>
-------------------------------	---
















Application Number : 10/698179   
Confirmation Number: 2504  
First Named Applicant: Thomas Kenny  
Attorney Docket Number:  
Art Unit:  
Examiner:  
Search string: ( 2039593 or 4574876 or 6206022 or 6253835 or 6437981 ).pn

Certification: This Information Disclosure Statement was submitted under the following conditions, which satisfies the requirement under 37 CFR 1.97(e). The filer certified:

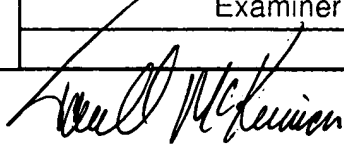
That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement.

## US Patent Documents

**Note: Applicant is not required to submit a paper copy of cited US Patent Documents**

init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
	1	2039593	1936-05-05	T. N. Hubbuch et al.			
	2	4574876	1986-03-11	Aid			
	3	6206022	2001-03-27	Tsai et al.	B1		
	4	6253835	2001-07-03	Chu et al.	B1		
	5	6437981	2002-08-20	Newton et al.	B1		


## Signature

Examiner Name	Date
	3-14-06

# ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0

Title of Invention	METHOD AND APPARATUS FOR EFFICIENT VERTICAL FLUID DELIVERY FOR COOLING A HEAT PRODUCING DEVICE						
Application Number :		10/698179					
Confirmation Number:		2504					
First Named Applicant:		Thomas Kenny					
Attorney Docket Number:							
Art Unit:							
Examiner:							
Search string:		( 6014312 or 6438984 or 6581388 or 6587343 ).pn					
<p><u>Certification:</u> This Information Disclosure Statement was submitted under the following conditions, which satisfies the requirement under 37 CFR 1.97(e). The filer certified:</p> <p>That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement.</p>							
<b>US Patent Documents</b>							
<b>Note: Applicant is not required to submit a paper copy of cited US Patent Documents</b>							
init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
PM	1	6014312	2000-01-11	Schulz-Harder et al.			
PM	2	6438984	2002-08-27	Novotny et al.	B1		
PM	3	6581388	2003-06-24	Novotny et al.	B2		
PM	4	6587343	2003-07-01	Novotny et al.	B2		
<b>Signature</b>							
Examiner Name				Date			

*Small McKinnon*

*3-14-06*

# ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0

## Title of Invention

METHOD AND APPARATUS FOR EFFICIENT VERTICAL  
FLUID DELIVERY FOR COOLING A HEAT PRODUCING DEVICE

Application Number : 10/698179



Confirmation Number: 2504

First Named Applicant: Thomas Kenny

Attorney Docket Number:

Art Unit:

Examiner:

Search string: ( 5043797 or 5490117 or 5740013 or 5768104 or 5921087 or 6366467 or 6459581  
or 6600220 or 6743664 or 20020121105 or 20030121274 or 20040040695 or  
20040052049 or 20040089008 or 20040125561 or 20040160741 or 20040188069  
) .pn

Certification: This Information Disclosure Statement was submitted under the following conditions, which satisfies the requirement under 37 CFR 1.97(e). The filer certified:

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement.





















## US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
TM	1	5043797	1991-08-27	Lopes			
TM	2	5490117	1996-02-06	Oda et al.			
	3	5740013	1998-04-14	Roesner et al.			
	4	5768104	1998-06-16	Salmonson et al.			
	5	5921087	1999-07-13	Bhatia et al.			
	6	6366467	2002-04-02	Patel et al.	B1		
	7	6459581	2002-10-01	Newton et al.	B1		
	8	6600220	2003-07-29	Barber et al.	B2		
TM	9	6743664	2004-07-01	Liang et al.	B2		

## US Published Applications

Note: Applicant is not required to submit a paper copy of cited US Published Applications

init	Cite.No.	Pub. No.	Date	Applicant	Kind	Class	Subclass
	1	20020121105	2002-09-05	McCarthy, Jr. et al.	A1		
	2	20030121274	2003-07-03	Wightman	A1		
	3	20040040695	2004-03-04	Chesser et al.	A1		
	4	20040052049	2004-03-18	Wu et al.	A1		
	5	20040089008	2004-05-13	Tilton et al.	A1		
	6	20040125561	2004-07-01	Gwin et al.	A1		
	7	20040160741	2004-08-19	Moss et al.	A1		
	8	20040188069	2004-09-30	Tomioka et al.	A1		














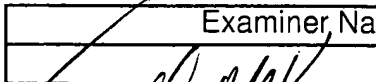
Signature

Examiner Name	Date
	3-14-06

# ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18



Stylesheet Version v18.0

Title of Invention	METHOD AND APPARATUS FOR EFFICIENT VERTICAL FLUID DELIVERY FOR COOLING A HEAT PRODUCING DEVICE						
Application Number :	10/698179						
Confirmation Number:	2504						
First Named Applicant:	Thomas Kenny						
Attorney Docket Number:							
Art Unit:							
Examiner:							
Search string:	( 5316077 or 6167948 or 6606251 or 20030062149 ).pn						
<p><u>Certification:</u> This Information Disclosure Statement was submitted under the following conditions, which satisfies the requirement under 37 CFR 1.97(e). The filer certified:</p> <p>That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement.</p>							
<b>US Patent Documents</b>							
Note: Applicant is not required to submit a paper copy of cited US Patent Documents							
init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
	1	5316077	1994-05-31	Reichard			
	2	6167948	2001-01-02	Thomas	B1		
	3	6606251	2003-08-12	Kenny, Jr. et al.	B1		
<b>US Published Applications</b>							
Note: Applicant is not required to submit a paper copy of cited US Published Applications							
init	Cite.No.	Pub. No.	Date	Applicant	Kind	Class	Subclass
	1	20030062149	2003-04-03	Goodson et al.	A1		
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Examiner Name				Date			
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# ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0


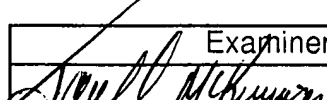
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Application Number :	10/698179						
Confirmation Number:	2504						
First Named Applicant:	Thomas Kenny						
Attorney Docket Number:							
Art Unit:							
Examiner:							
Search string:	( 3361195 or 3771219 or 4644385 or 4893174 or 5386143 or 5658831 or 5675473 or 6140860 or 6477045 or 6492200 or 6578626 ).pn						
<p><u>Certification:</u> This Information Disclosure Statement was submitted under the following conditions, which satisfies the requirement under 37 CFR 1.97(e). The filer certified:</p> <p>That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement.</p>							
<b>US Patent Documents</b>							
<b>Note: Applicant is not required to submit a paper copy of cited US Patent Documents</b>							
init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
TM	1	3361195	1968-01-02	A. Meyerhoff et al.			
TM	2	3771219	1973-11-13	Tuzi et al.			
TM	3	4644385	1987-02-17	Nakanishi et al.			
	4	4893174	1990-01-09	Yamada et al.			
	5	5386143	1995-01-31	Fitch			
	6	5658831	1997-08-19	Layton et al.			
	7	5675473	1997-10-07	McDunn et al.			
	8	6140860	2000-10-31	Sandhu et al.			
	9	6477045	2002-11-05	Wang	B1		
	10	6492200	2002-12-10	Park et al.	B1		
TM	11	6578626	2003-06-17	Calaman et al.	B1		
Signature				 3-14-06			



# ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0

Title of Invention	METHOD AND APPARATUS FOR EFFICIENT VERTICAL FLUID DELIVERY FOR COOLING A HEAT PRODUCING DEVICE						
Application Number :	10/698179						
Confirmation Number:	2504						
First Named Applicant:	Thomas Kenny						
Attorney Docket Number:							
Art Unit:							
Examiner:							
Search string:	( 0596062 or 2273505 or 4211208 or 6397932 or 20020075645 ).pn						
<p><u>Certification:</u> This Information Disclosure Statement was submitted under the following conditions, which satisfies the requirement under 37 CFR 1.97(e). The filer certified:</p> <p>That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement.</p>							
<b>US Patent Documents</b>							
<b>Note: Applicant is not required to submit a paper copy of cited US Patent Documents</b>							
init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
<i>TM</i>	1	0596062	1897-12-28	W. P. Firey		<i>5</i>	<i>5</i>
<i>TM</i>	2	2273505	1942-02-17	R. R. Florian		<i>5</i>	<i>5</i>
<i>TM</i>	3	4211208	1980-07-08	Lindner		<i>5</i>	<i>5</i>
<i>TM</i>	4	6397932	2002-06-04	Calaman et al.	B1	<i>5</i>	<i>5</i>
<b>US Published Applications</b>							
<b>Note: Applicant is not required to submit a paper copy of cited US Published Applications</b>							
init	Cite.No.	Pub. No.	Date	Applicant	Kind	Class	Subclass
<i>TM</i>	1	20020075645	2002-06-20	Kitano et al.	A1	<i>5</i>	<i>5</i>
<b>Signature</b>							
				Examiner Name			
				Date			
				<i>3-14-06</i>			

## ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v1.8  
Stylesheet Version v1.8.0

Title of Invention	METHOD AND APPARATUS FOR EFFICIENT VERTICAL FLUID DELIVERY FOR COOLING A HEAT PRODUCING DEVICE						
Application Number:	10/698179						
Confirmation Number:	2504						
First Named Applicant:	Thomas Kenny						
Attorney Docket Number:							
Search string:	(0596062 or 2273505 or 4211208 or 6397932 or 20020075645).pn.						
Certification: This Information Disclosure Statement was submitted under the following conditions, which satisfies the requirement under 37 CFR 1.97(e). The filer certifies:  That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement.							
US Patent Documents							
Note: Applicant is not required to submit a paper copy of cited US Patent Documents							
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Note: Applicant is not required to submit a paper copy of cited US Published Applications							

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Signature

Examiner Name	Date
<i>Shelli McKinnon</i>	3-14-06

FORM PTO-1519 (Modified)		U.S. Department of Commerce Patent and Trademark Office		Attorney Docket No.: COOL-01302		Serial No.: 10/698,179	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (See Several Sheets If Necessary)				Applicants: Thomas W. Kenny et al.			
(37 CFR § 1.98(b))				Filing Date: October 30, 2003		Group Art Unit: 3753	

U.S. PATENT DOCUMENTS							
Examiner Initials	Serial / Patent Number	Issue Date	Applicant / Patentee	Class	Subclass	Filing Date	
	AA						
	AB						
	AC						
	AD						
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	AH						
	AI						
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FOREIGN PATENTS OR PUBLISHED FOREIGN PATENT APPLICATIONS							
	Serial / Patent Number	Publication Date	Country / Patent Office	Class	Subclass	Translation	
						Yes	No
<i>TM</i>	AK	JP 10-99592	04/21/98	JP	D06F	39/08	X
<i>TM</i>	AL	JP 2001-326311	11/22/01	JP	H01L	23/427	X
	AM						
	AN						
	AO						

OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)	
	AP
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	AR
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Examiner: _____	Date Considered: _____
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*Small McKinnon*

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(Use Several Sheets If Necessary)

Applicants: Thomas W. Kenny et al.

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Group Art Unit: 3753

## U.S. PATENT DOCUMENTS

Examiner Initials	Serial / Patent Number	Issue Date	Applicant / Patentee	Class	Subclass	Filing Date
	AA					
	AB					
	AC					
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	AJ					

## FOREIGN PATENTS OR PUBLISHED FOREIGN PATENT APPLICATIONS

	Document Number	Publication Date	Country / Patent Office	Class	Subclass	Translation	
						Yes	No
<i>TM</i>	AK	JP 1-256775	10/13/89	JP	F 25 D	9/00	X
	AL						
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## OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)

	AP	
	AQ	
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